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The guide was developed as a facility planning tool for use by business education instructors, state supervisors, university school planners, and local school officials. It lists a series of questions about the educational program to be offered, the answers to which bear directly on the numbers and kind of instructional areas needed in the contemplated facilities. After program decisions are recorded the guide provides for the description of instructional areas needed to meet the program requirements. Much of the material is presented in a checklist format which allows for consideration of alternatives in facility planning. Other guides in this series are available for home economics (ED 022 924), data processing (ED 023 927), and machine trades (ED 023 926). Discussed are the major purpose, the underlying assumptions, and the guiding principles which were utilized in the preparation of the guide; the instructional program as to program features, objectives and kinds of programs which will be organized to implement them; and the distinct types of instructional areas to be provided. Also included is an annotated bibliography of reference sources which offer more detailed treatment of the various stages of facility planning. (MM)

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RESEARCH 26

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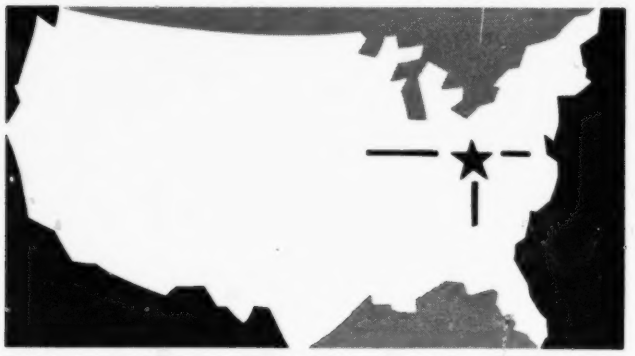

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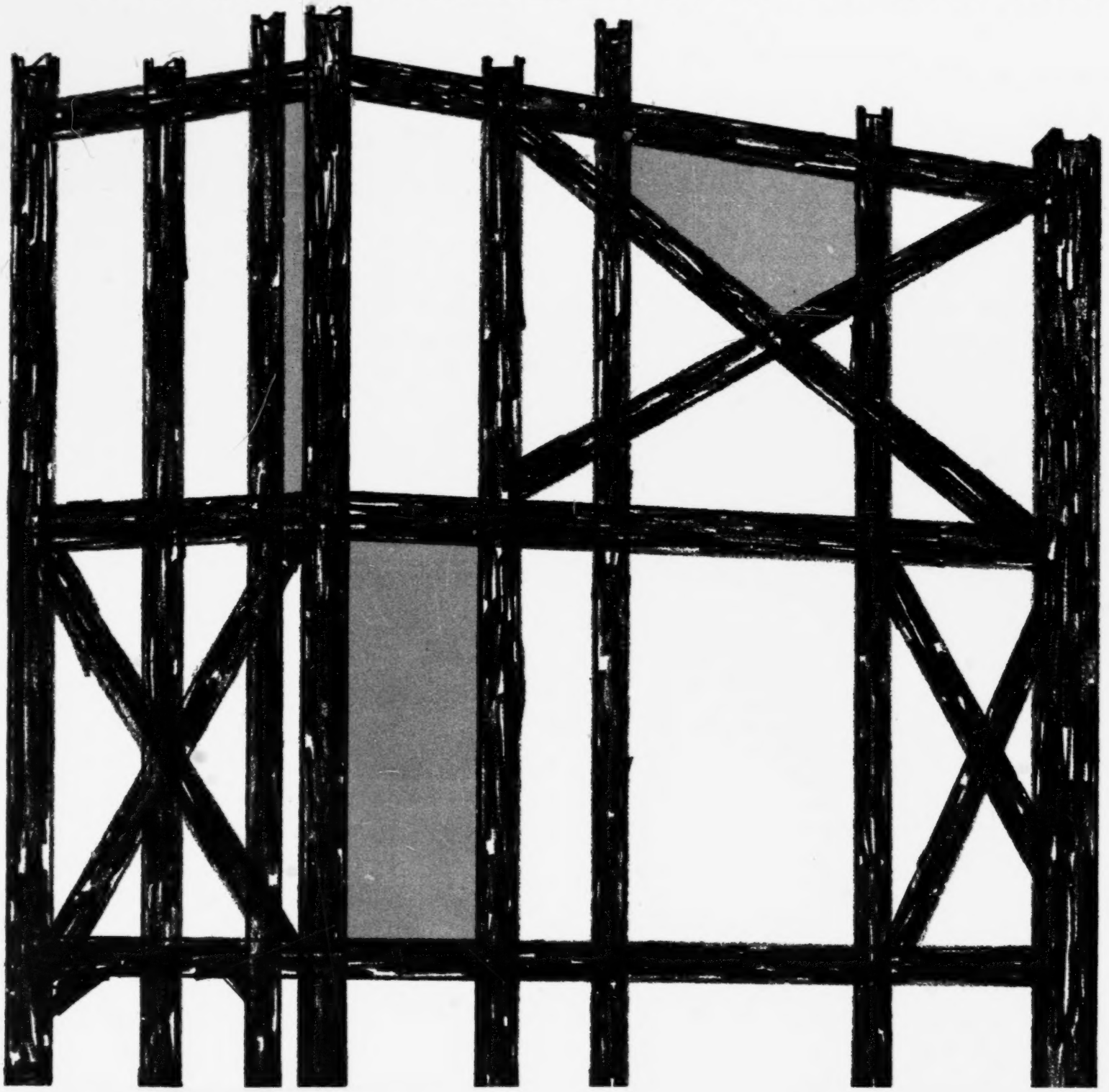
A GUIDE FOR PLANNING FACILITIES FOR OCCUPATIONAL PREPARATION PROGRAMS in BUSINESS & OFFICE OCCUPATIONS



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The major objectives of The Center follow:

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional, and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;

3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and inservice education program;

6. To provide a national information retrieval, storage, and dissemination system for vocational and technical education linked with the Educational Resources Information Center located in the U. S. Office of Education.

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RESEARCH 26

Interim Report
Grant No. OEG 3-7-000158-2037

A GUIDE FOR PLANNING FACILITIES FOR OCCUPATIONAL PREPARATION PROGRAMS IN BUSINESS AND OFFICE OCCUPATIONS

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This publication was prepared pursuant to a grant with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

FOREWORD

One of the most fundamental concerns in planning for vocational and technical education facilities is that of assuring that educational requirements dictate the nature of the facilities. Other concerns include planning a sufficiently adaptable and flexible structure to permit needed modifications and programmatic changes over the lifetime of the building. Experiences have shown that adequate manuals and guide materials can provide substantial assistance in planning educational facilities. This document is a guide for planning facilities for occupational preparation programs in data processing. The information recorded in the guide is to be used in the preparation of educational specifications.

The guide lists a series of pivotal questions about the educational program to be offered. The answers to these program questions bear directly on the numbers and kinds of instructional areas needed in the contemplated facilities. After program decisions are recorded, the guide provides for the description of instructional areas needed to meet program requirements. Much of the material is presented in a checklist format which allows for consideration of alternatives in facility planning.

The guide was designed for use by any person or groups of persons responsible for planning business and office education facilities. It is anticipated that knowledgeable persons such as data processing instructors, state supervisors, university school plant planners, and local administrators will find the guide a useful planning tool. The guide can also be used for instructional purposes at universities, colleges, seminars, and institutes.

This guide is the fourth in a series being developed by The Center. Subsequent guides will be published for animal science technology, automative trades, business and office occupations, dental technology, electrical technology, machine trades, medical technology, and metallurgy. The first three guides developed were in the fields of home economics, machine trades and data processing. Vocational educators should also refer to the basic guide, A Guide to Systematic Planning for Vocational and Technical Education. All guides follow the general format developed by The Center project staff and Dr. M. J. Conrad, head, Administration and Facilities Unit, College of Education, The Ohio State University.

The Center for Vocational and Technical Education, The Ohio State University, worked cooperatively with Dr. William Selden, state supervisor, Business Education, Pennsylvania Department of Public Instruction in preparing this guide. Center project staff members were Dr. Richard F. Meckley, Ivan E. Valentine, and Zane McCoy.

The Center is grateful to the many individuals and groups whose assistance and suggestions led to the successful conclusion of the project. Special appreciation is due the reviewers of this publication: Russell Mercer, state supervisor of office and business occupations, Atlanta, Georgia; William E. Jennings, professor of education, Ohio State University; O. J. Byrnside, Jr., executive director, National Business Education Association, Washington, D. C.

Robert E. Taylor, Director
The Center for Vocational
and Technical Education

CONTENTS

PART I INTRODUCTION

3 Purpose of Guide
3 Organization of Guide
4 Underlying Assumptions
4 Guiding Principles
5 Recent Instructional Trends

PART II THE INSTRUCTIONAL PROGRAM

7 Basic Program Features
10 Educational Objectives
15 Program Content Areas
17 Planning Instructional Areas by Modes of Learning
18 Specialized and Multi-use of Instructional Areas
19 Occupational Preparation Programs To Be Offered
20 Instructions for Completing Form A
23 Form A--Basic Program Information

PART III DISTINCT TYPES OF INSTRUCTIONAL AREAS TO BE PROVIDED

27 Quantitative Facility Needs
29 Instructions for Completing Form B
31 Form B--Lecture/Demonstration Area Requirements by Content Areas
33 Instructions for Completing Form C
35 Form C--Seminar Area Requirements by Content Areas
37 Instructions for Completing Form D
39 Form D--Laboratory Area Requirements by Content Areas
41 Form E--Summary of Facility Requirements for Occupational Preparation Data Processing Programs
43 Qualitative Facility Needs
44 Form F--Description of Lecture/Demonstration Area(s)
48 Form G--Description of Seminar Area(s)
51 Form H--Description of Accounting Laboratory Area(s)
55 Form I--Description of Data Processing Laboratory Area(s)
59 Form J--Description of Model Office Laboratory Area(s)
62 Form K--Description of Office Practice Laboratory Area(s)
69 Form L--Description of Shorthand Laboratory Areas
73 Form M--Description of Typewriting Laboratory Area(s)
77 Form N--Additional Planning Considerations

PART IV ANNOTATED BIBLIOGRAPHY

79 General Facility Planning
82 Vocational-Technical Facility Planning
84 Business and Office Education Facility Planning

A GUIDE FOR PLANNING FACILITIES FOR OCCUPATIONAL PREPARATION PROGRAMS IN BUSINESS AND OFFICE OCCUPATIONS

FORMS
A
B
C
D
E
F
G
H
I
J
K
L
M
N

PART I

INTRODUCTION

PURPOSE OF GUIDE

The major purpose of this guide is to elicit the necessary information for the writing of educational specifications for facilities to house needed occupational preparation programs in business and office education. The guide was developed as a facility planning tool for use by such knowledgeable persons as business education instructors, state supervisors, university school plant planners, and local school officials. It can also be used for instructional purposes at universities, colleges, seminars, and institutes.

In addition to providing important and comprehensive information to be incorporated in educational specifications, the guide is also designed to:

- Assist planners in the formation of creative solutions to the housing of desired educational programs.
- Prevent important considerations from being overlooked in the facility planning process.
- Encourage logical and systematic facility planning.

ORGANIZATION OF GUIDE

The facility planning guide is organized under four major headings or parts. Part I (Introduction) discusses the major purpose, the underlying assumptions, and the guiding principles which were utilized in the preparation of the guide.

In Part II (The Instructional Program) important information is sought on the business and office education department's basic program features, objectives, and the kinds of programs which will be organized to implement them.

Part III (Distinct Types of Instructional Areas to be Provided) describes the actual space desired to house the planned programs.

Part IV is an annotated bibliography of reference sources which offer more detailed treatment of the various phases of facility planning.

UNDERLYING ASSUMPTIONS

Important assumptions were made in the preparation of this guide. They were:

- The information recorded in this guide will be used in the preparation of educational specifications for use by an architect in facility design.
- The numbers and kinds of students to be served by the program are generally known. Such information has been provided by enrollment projections, housing patterns, census data, student interests studies, etc.
- Sufficient finances are available to support both the provision of facilities and to operate the kinds of educational program outlined in the guide.
- Major educational program decisions have or are being made. Content of instruction has been determined through educational surveys, advisory committees, school board study, etc. Instructional methods have been determined by qualified instruction and other appropriate staff members. To assure adequate educational program planning, the guide will ask important questions which may serve as guidelines to such planning.
- A cooperative or collaborative relationship has been established with knowledgeable community personnel who are aware of economic, political, and social conditions which must be taken into account in short- and long-range educational planning.

GUIDING PRINCIPLES

In planning facilities to house business and office education occupational preparation programs, it is suggested that program and facility decisions be consistent with the following guiding principles.

- The educational program is the basis for planning space and facilities.
- Space and facilities should be planned to accommodate changes in the educational program.
- The program should be planned to serve the needs of a variety of groups in the community.

- Space and facilities for the program can be extended through the use of community resources.

- Safe and healthful housing must be provided for all students.

- Space and facilities should be considered in context with the total educational program of the institution and the community.

RECENT INSTRUCTIONAL TRENDS

- Expanded programs to reach not only the average and those who are college bound, but also the unusually gifted, the physically handicapped, the mentally retarded, and the culturally disadvantaged are needed and being provdied by occupational preparation programs.

- Interdisciplinary units or courses is increasingly being developed cooperatively among instructors. Cooperative instruction is encouraged and facilitated by the proximity of instructional and work areas where teachers can plan together and produce instructional materials.

- Mobile equipment and convenient space for storing it is making the same space available for many purposes and resulting in more effective and efficient use of space.

- Mechanical and electronic teaching aids are being utilized to a greater degree by instructors in occupational preparation programs. To some extent, the effective use of such devices depends upon the accessibility and convenience of storage.

PART II

THE INSTRUCTIONAL PROGRAM

In Part II of the guide, important instructional program decisions with respect to basic program features, objectives, and needed information on occupational preparation programs to be housed are recorded.

BASIC PROGRAM FEATURES

Basic features of the educational program are determined greatly by a school or department's educational philosophy. This philosophy provides a base from which program objectives and teaching and learning activities designed to meet these objectives can be derived. In the final analysis, it is the kinds of teaching and learning activities to be carried on which should determine facility needs.

In this section, planners have an opportunity to express basic program features which will serve as guidelines for the planned occupational preparation programs in business and office education.

Please indicate below the relative degree of agreement on each of the stated program features by circling the appropriate number. The scale provided for this purpose is as follows: 1 = high degree of agreement; 2 = general agreement; 3 = only slight agreement; and N = not in agreement. (This same scale will be used frequently throughout the planning guide.)

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. Purpose of Program

   a) To prepare students for gainful employment — 1 2 3 N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

b) To prepare students for entry into further educational programs — 1 2 3 N

c) To provide occupational opportunities for culturally disadvantaged students — 1 2 3 N

d) To provide students with skills needed for job upgrading — 1 2 3 N

e) To provide students with learnings in academic disciplines — 1 2 3 N

f) Other statements of program purpose which should be included are:
1) _____
2) _____
3) _____
4) _____

2. Students

a) Student admission to the program is on the basis of selective criteria which include:
1) _____
2) _____
3) _____
4) _____

b) Emphasis is placed on the learning of manual skills by students — 1 2 3 N

c) Emphasis is placed on the learning of theory by students — 1 2 3 N

d) Students have freedom of movement and access to learning materials — 1 2 3 N

e) Cooperative work experience with local business and industry for students is an important phase of the program — 1 2 3 N

f) Other basic program features relating to students which should be included are:
1) _____
2) _____

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

3) _____

4) _____

_____

_____

3. Instruction

a) The instructional approach is single-discipline business and office education as opposed to inter-disciplinary (business and office education, science, etc.). If not a single-discipline approach, describe the inter-disciplinary approach and the disciplines involved. yes no

_____

_____

_____

b) Cooperative or team instruction is an important aspect of the program. If this mode of instruction is to be extensively emphasized, describe it in general terms. yes no

_____

_____

_____

c) The utilization of community resources is important in instruction. If a high emphasis is to be placed on use of community resources, describe some of these resources. yes no

_____

_____

_____

d) Instructional flexibility is a necessity. If a high emphasis is to be placed on instructional flexibility please describe the kinds of flexibility desired. 1 2 3 N

_____

_____

_____

4. Other basic program features relating to instruction which should be included are:

a) _____

_____

b) _____

_____

c) _____

_____

d) _____

_____

EDUCATIONAL OBJECTIVES

Educational objectives are often identified as goals or outcomes of the educational program. An objective should describe a desired educational outcome that is consistent with a school's philosophy.

Objectives are important to both the planner and the architect since they determine the school's program and related activities. They provide important implications which when translated into facilities can both enhance as well as adequately house the desired program. Thus it becomes imperative to clearly establish the program objectives prior to embarking on educational specifications and subsequent building design.

The purpose of this part of the guide is to bring together these elements in a way to provide direction and understanding for both the planner and the architect. Space is provided below to indicate degree of emphasis by circling the appropriate number for each of the objectives, and to list additional objectives. The scale provided for this stated purpose ranges from 1 for major emphasis down to N for no emphasis.

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1.	To prepare students for entry into gainful employment	1	2	3	N
2.	To motivate and recruit capable and qualified students to enroll in post-secondary programs	1	2	3	N
3.	To permit individuals to retrain or return and continue professional training	1	2	3	N
4.	To provide pre-professional educational training for students who plan to enter colleges and universities	1	2	3	N
5.	To develop in students specific and measurable knowledge and skills in accounting which include:				
	a) A foundation in bookkeeping principles and terminology which can be used if accounting is chosen as a vocation.	1	2	3	N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

b) Insight into the operation, function, and internal operation of a business enterprise — 1 2 3 N

c) A foundation for maintaining a set of books for a small business — 1 2 3 N

d) Understanding of how the basic principles of bookkeeping can be adapted to personal and social use — 1 2 3 N

e) Relationship of all bookkeeping forms to the entire bookkeeping cycle from the opening entries to the post-closing trial balances — 1 2 3 N

f) Wholesome respect for business as an institution, and the opportunities business offers for employment — 1 2 3 N

g) Knowledge of how a properly kept set of records can provide the necessary information for the preparation of a tax return for either a private individual or a business enterprise — 1 2 3 N

h) Understanding of how to prepare, read, and interpret simple business reports and financial statements — 1 2 3 N

i) Necessity and importance of systematic and accurate records as a guide to successful business management — 1 2 3 N

j) Handling of the capital accounts made necessary by partnerships and corporations — 1 2 3 N

k) Understanding of current tax laws and regulations which have a direct bearing on accounting records — 1 2 3 N

l) Skill in the use of accounting as an instrument of control in modern business — 1 2 3 N

m) _____ — 1 2 3 N

n) _____ — 1 2 3 N

6. To develop in students specific and measurable knowledge and skills in data processing which include:

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

a) Ability to see relationships (for instance, one set of figures against the other, as well as one job to another) 1 2 3 N

b) Ability to analyze problems before solving them (logical thinking) 1 2 3 N

c) Knowledge of business organization and the more common office procedures 1 2 3 N

d) Understanding of business ethics 1 2 3 N

e) Ability to adapt to change 1 2 3 N

f) _____ 1 2 3 N

g) _____ 1 2 3 N

7. To develop in students specific and measurable knowledge and skills in the area of a model office situation which include:

a) Responsibility of typing communications that will be used 1 2 3 N

b) Ability to transcribe routine correspondence 1 2 3 N

c) Efficient use of photocopy machines 1 2 3 N

d) Typing stencils, master sheets, and mats 1 2 3 N

e) Development of proper telephone techniques 1 2 3 N

f) _____ 1 2 3 N

g) _____ 1 2 3 N

8. To develop in students specific and measurable knowledge and skills in office practice which include:

a) Appreciations, ideals, and socially desirable attitudes and work habits which are necessary for success in an office situation 1 2 3 N

b) Understanding of the responsibilities of an initial job in the business world 1 2 3 N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

c) Experience in as practical a situation as possible in the performance of routine office jobs — 1 2 3 N

d) Ability to judge the marketability of one's own work and to make the necessary adjustments or corrections — 1 2 3 N

e) Building both speed and accuracy in work performed in the business office — 1 2 3 N

f) Desirable standards of office appearance — 1 2 3 N

g) Proper attitudes toward promotional possibilities, as well as the realization of additional responsibilities — 1 2 3 N

h) Experience in applying for a position — 1 2 3 N

i) Knowledge of how to operate commonly used office machines — 1 2 3 N

j) Understanding of the rules and principles of filing — 1 2 3 N

k) Thorough review of the fundamentals of arithmetic — 1 2 3 N

l) _____ — 1 2 3 N

m) _____ — 1 2 3 N

9. To develop in students specific and measurable knowledge and skills in shorthand which include:

a) Ability to hear words as groups of sounds; that is, the concept of phonetics — 1 2 3 N

b) Ability to associate syllabic sounds with shorthand symbols — 1 2 3 N

c) Reading shorthand rapidly and intelligently — 1 2 3 N

d) Developing a fluent and well-proportioned style of shorthand writing — 1 2 3 N

e) Writing automatically abbreviated word forms, frequently used words, and phrases — 1 2 3 N

f) Write readable shorthand outlines for unfamiliar words — 1 2 3 N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

g) Develop an awareness of words per se, their meanings, pronunciation, spelling, and shorthand equivalent — 1 2 3 N

h) Strengthen knowledge of English grammar, spelling, punctuation, capitalization, and hyphenation — 1 2 3 N

i) Evaluation of one's own work to strive for self-improvement — 1 2 3 N

j) Desirable work habits, personal traits, and attitudes that will help one become a successful office worker — 1 2 3 N

k) Taking notes in shorthand from lectures and library resources — 1 2 3 N

l) Performing all operations involved in producing a mailable transcript, such as making carbon copies, addressing envelopes, proofreading, and correcting errors — 1 2 3 N

m) Verify names, addresses, dates, and amounts in transcripts — 1 2 3 N

n) Acquaintanceship with reference sources available to find answers to transcription problems — 1 2 3 N

o) Proper and efficient methods of handling materials and care of equipment — 1 2 3 N

p) Habits of regular attendance and punctuality to meet business standards — 1 2 3 N

q) Use of shorthand for composing rough drafts of letters and memoranda and taking notes of telephone conversations — 1 2 3 N

r) _____ — 1 2 3 N

s) _____ — 1 2 3 N

10. To develop in students specific and measurable knowledge and skills in typewriting which include:

a) Efficient operation of a typewriter — 1 2 3 N

b) Competencies in punctuation, spelling, and syllabication — 1 2 3 N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

c)	Experience in locating and correcting one's own errors	1	2	3	N
d)	Understanding of how to clean the typewriter, change the ribbon, and report the need for any adjustments or repairs	1	2	3	N
e)	Ability to use typewriting supplies effectively	1	2	3	N
f)	Mastering the typing of numbers and special characters, such as ", $, etc.	1	2	3	N
g)	Solution of problems without detailed instructions	1	2	3	N
h)	Opportunity to type forms (including basic legal forms) and business letters under office conditions	1	2	3	N
i)	Work habits that are important to success in a business office, such as organization of work so assignments will be promptly completed, following directions, and continuous self-evaluation	1	2	3	N
j)	Typing of manuscripts without frequent need to check reference books	1	2	3	N
k)	Composing on a typewriter as easily as with a pencil	1	2	3	N
l)	_____	1	2	3	N
m)	_____	1	2	3	N

PROGRAM CONTENT AREAS

The program in business and office education should be designed to meet its established objectives. All decisions made with respect to educational program should be consistent with established philosophy and objectives.

Instruction in business and office education may be classified into the two major categories of socioeconomic and occupational preparation. This guide is designed to assist in the planning of facilities for occupational preparation programs.

The socioeconomic area provides a background of business understanding which should develop a degree of economic competency and personal-use skill for all pupils. This area is pre-vocational in nature and includes subjects such as business economics, business law, and general business, which build attitudes and knowledge for economic competency in the home and in the community. An opportunity for pupils to learn typewriting and shorthand, which is becoming a basic communication skill, also is afforded.

In occupational preparation, the courses or units of instruction emphasize the student acquisition of knowledge and the development of understanding, attitudes, and skills relevant to occupational preparation and the utilization of specialized skills of business and office occupations. Learning activities and experiences are organized to enable students to develop competencies essential for entry into their chosen occupations, to further training, or to acquire new or additional competencies for upgrading their occupational profession.

Instruction in preparation for business and office occupations is usually given in discrete subject areas or courses. Subject matter is coordinated with appropriate field, laboratory, and work experience. Programs of occupational preparation for the most part can be classified under the six broad headings or content areas of 1) Accounting; 2) Data Processing; 3) Model Office; 4) Office Practice; 5) Shorthand; and 6) Typewriting.

These six content areas relate directly to the field of business and office education and can be used to categorize most occupational preparation programs in the field. However, students in these programs also take courses in subjects such as English, mathematics, and physical education which are available to all students. For example, a student in training to become an accountant might take the following courses or units:

Courses	Content Areas
Accounting II	Occupational Preparation
Business Law	Socioeconomic
Office Practice	Occupational Preparation
American History	Academic
English	Academic
Physical Education	Physical Education

The concept of content areas is used in this planning guide because different instructional content areas usually call for different kinds of instructional facilities and equipment. The following content areas, which usually call for specialized instructional areas, are used in this guide:

- Accounting
- Data Processing
- Model Office
- Office Practice
- Shorthand
- Typewriting
- Academic (e.g., English, mathematics, and social studies)

- Science (e.g., physics, chemistry, and biology)
- Foreign Language (e.g., French, German, and Spanish)
- Physical Education
- Other (used when a course or unit to be offered will not fit into any of the above content areas)

PLANNING INSTRUCTIONAL AREAS BY MODES OF LEARNING

The planning of instructional areas for vocational facilities can be substantially aided through utilization of the concept of modes of learning. Learning can be divided into three distinct modes--reaction learning, interaction learning, and action learning.

Reaction learning, which usually occurs in an instructional area designed for lecture and demonstration, is characterized by activities which tend to be largely teacher-centered with the central focus on instruction. Student activities include listening, observing, and the taking of notes. Group size may vary from one to many as the number of students has little effect on the learning experience if proper technological aids such as television, microphones, projectors and the like are used. Because student activities are relatively passive in reaction learning, a short optimum time span is normally employed.

Lecture/demonstration areas can be used commonly for reaction learning in all subject areas. For example, in planning facilities for two diverse preparation programs in business and office education programs such as accounting and data processing, the planner should bear in mind that reaction learning for students in both programs can occur in the same instructional area. This means that facility planning should be done in terms of the total program rather than its fractional parts. In many instances, lecture/demonstration areas can also be shared by distinct and dissimilar service areas such as business and office and agricultural education. Where much facility sharing is planned, the planner should consider the optimum location within the total building and clustering various instructional areas.

Interaction learning, which usually occurs in a seminar instructional area, is characterized by teacher and learner participating as both listener and speaker. This mode of learning, of course, must occur in groups; however, sociological research suggests these groups should not exceed fifteen persons for optimum effectiveness. Active interaction of all students generally requires a longer time span than reaction learning.

Seminar areas, like lecture/demonstration areas, are usually designed for common use by all vocational service areas. The same considerations which were outlined for lecture/demonstration areas also apply to seminar areas.

Action learning, which usually occurs in a laboratory to instructional area, allows the individual student to learn by doing. Students learn on an individual basis, but may, nevertheless, function in a group setting with fixed time periods. Often in flexible educational programs, students are scheduled

for laboratory work on an independent basis. Since action learning involves overt action by individual students, the teacher's role is largely that of a consultant to the learner.

Laboratory areas, of necessity, are more specialized than lecture/demonstration areas used for reaction learning and seminar areas used for interaction learning. Since laboratory areas are designed to facilitate the learning of specific vocational and technical skills, there is less likelihood of sharing such areas by students in various vocational training programs. However, wherever common elements of skill instruction are found among vocational training programs, the possibility of sharing and clustering laboratory facilities can be both expedient and economical.

SPECIALIZED AND MULTI-USE OF INSTRUCTIONAL AREAS

The relative amounts of time to be spent by students in a given vocational program in reaction, interaction, and action learning has definite implications for the number and kind of spaces to be provided. These time considerations combined with decisions on the degree of specialization versus multi-use help determine the nature of facilities required. Since most vocational programs have concentrated on action learning experiences, facilities designed for a particular vocational program have not always provided adequate reaction and interaction facilities because of the limited utilization of such spaces. Often, the same area is used for all instruction in an occupational preparation program. However, if the learning activities in any vocational program are broken down into the modes of learning, it will be noted that reaction and interaction spaces are the same regardless of the vocational area. By providing common reaction and interaction spaces for all vocational programs, the most modern technological aids can be justified which, in most cases, will permit lectures, demonstrations and other group reaction learning experiences for groups larger than typically used in vocational education programs. Not only will group reaction learning be improved but more time will become available for the professional staff to work with individuals and small groups in interaction and action learning activities.

Scheduling group reaction and interaction learning experiences into specialized facilities permits complete flexibility in the use of action learning laboratories on an open individualized basis since students would no longer need to be scheduled into the action learning laboratories on a specific class basis. This will permit 100 percent room utilization of the action learning laboratories and also permit the introduction of differentiated staff assignments into vocational education.

The open laboratory concept also permits the planned sharing of certain specialized equipment which may be required by two or more vocational programs.

NOTE: THE FOLLOWING SECTIONS OF THE GUIDE (PAGES 20-39) WILL ASSIST THE PLANNER IN MAKING MATHEMATICAL DETERMINATIONS OF THE NUMBER OF INSTRUCTIONAL AREAS NEEDED TO HOUSE THE DESIRED PROGRAM. IF THE NUMBER OF INSTRUCTIONAL AREAS REQUIRED IS ALREADY KNOWN, PLANNERS MAY NOW PROCEED TO FORM E, PAGE 41. IF, HOWEVER, MATHEMATICAL DETERMINATIONS ARE TO BE MADE, ALL FORMS SHOULD BE COMPLETED AS ACCURATELY AS POSSIBLE.

OCCUPATIONAL PREPARATION PROGRAMS TO BE OFFERED

Information of each business and office occupational preparation program to be offered is entered on a separate Form A which follows. Directions for completing Form A(s) appear on pages 20-21. To assist planners, a sample completed Form A is given on page 22. Data entered in the Sample Form A are for an accounting program. The data were assumed for purpose of illustration. Some other occupational preparation programs commonly offered in the vocational service area of business and office education include filing, office machines and general office clerical; information communication; materials support occupations; transporting, storing, and recording; personnel, training and related; and supervisory and administrative management.

Form A, for each occupational preparation program, should be filled out as completely as possible. However, it is realized that a business and office education instructor completing Form A may be unaware of time allotments and methods of instruction in other subject areas. If such is the case, the instructor can only supply information on programs within the content areas of business and office education.

INSTRUCTIONS FOR COMPLETING FORM A
BASIC PROGRAM INFORMATION

Item 1
Occupational Preparation Program--Enter the name of the occupational program to be offered, e.g., information communication, supervisory and administrative management, etc. Complete a separate Form A for each occupational preparation program to be offered.

Item 2
Yearly Enrollment--Enter the projected maximum number of students to be enrolled yearly in the program.

Item 3
Nature of Students--Underline all categories which apply to the students to be enrolled in the program.

Item 4
Weeks of Instruction per Year--Enter the number of weeks per year the school will be open for instruction, e.g., 36 weeks, 52 weeks.

Item 5
Total Weekly Periods or Modules--Enter the total number of periods or modules (if modular scheduling is to be used) per week available for instructional purposes for each student. Do not count periods or modules scheduled for lunch and other non-instructional purposes.

Column 6
Courses of Instruction--List the courses or units of instruction to be offered either on a required or elective basis for the occupational preparation program.

Column 7
Content Area--Opposite each course of instruction, enter the appropriate content area as presented on page 16.

Column 8
Total Course Enrollment--Opposite each course of instruction, enter the projected maximum student enrollment.

Column 9
Maximum Group Size for Reaction Learning--Opposite each course or unit of instruction, enter the maximum group size in number of students for reaction (lecture/demonstration) type learning.

Column 10

Estimated Weekly Periods or Modules of Reaction Level Learning--Opposite each course or unit of instruction, enter the estimated number of periods or modules per week to be devoted to reaction learning per student.

Column 11

Weekly Group-Periods or Modules (Lecture/Demonstration)--To compute weekly group-periods or modules, divide the entry in Column 8 by the entry in Column 9 and round up to the nearest whole number. Then multiply the whole number by the entry in Column 10.

Column 12

Maximum Group Size for Interaction Learning--Opposite each course or unit of instruction, enter the maximum group size in number of students for interaction (seminar) type learning.

Column 13

Estimated Weekly Periods or Modules of Interaction Level Learning--Opposite each course or unit of instruction, enter the estimated number of periods or modules per week to be devoted to interaction learning per student.

Column 14

Weekly Group-Periods or Modules (Seminar)--To compute weekly group-periods or modules, divide the entry in Column 8 by the entry in Column 12 and round up to the nearest whole number. Then multiply the whole number by the entry in Column 13.

Column 15

Maximum Group Size for Action Learning--Opposite each course or unit of instruction, enter the maximum group size in number of students for action (laboratory) type learning.

Column 16

Estimated Weekly Periods or Modules of Action Level Learning--Opposite each course or unit of instruction, enter the estimated number of periods or modules per week to be devoted to action learning per student.

Column 17

Weekly Group-Periods or Modules (Laboratory)--To compute weekly group-periods or modules, divide the entry in Column 8 by the entry in Column 15 and round up to the nearest whole number. Then multiply the whole number. Then multiply the whole number by the entry in Column 16.

SAMPLE FORM A

BASIC PROGRAM INFORMATION

1. Occupational Preparation Program *Accountant*
2. Yearly Enrollment *120*
3. Nature of Students (underline appropriate categories): a. day school[1]; b. night school[1]; c. school age; d. adults; e. males; f. females; other (specify) _____
4. Weeks of Instruction per Year *36*
5. Total Weekly Periods or Modules *30*

Courses of Instruction	Content Areas	Total Course Enrollment	Maximum Group Sizes, Estimated Weekly Periods or Modules and Calculated Group-Modules or Period-Modules by Levels of Learning								
			REACTION*			INTERACTION**			ACTION***		
			Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Accounting I	*Accounting*	*60*	*100*	*1*	*1*	*15*	*2*	*8*	*25*	*7*	*21*
Accounting II	*Accounting*	*60*	*100*	*1*	*1*	*15*	*3*	*12*	*25*	*6*	*18*
Office Prac.	*Accounting*	*60*	*0*	*0*	*0*	*0*	*0*	*0*	*30*	*5*	*10*
Typewriting I	*Accounting*	*60*	*0*	*0*	*0*	*0*	*0*	*0*	*24*	*5*	*10*
Amer. History	*Academic*	*60*	*50*	*2*	*4*	*15*	*3*	*12*	*0*	*0*	*0*
Democracy	*Academic*	*60*	*50*	*1*	*2*	*15*	*4*	*16*	*0*	*0*	*0*
Biology	*Science*	*20*	*50*	*1*	*1*	*0*	*0*	*0*	*25*	*4*	*8*
Chemistry	*Science*	*10*	*50*	*2*	*1*	*0*	*0*	*0*	*25*	*5*	*5*
Phys. Ed. I	*Phys. Ed.*	*35*	*25*	*1*	*2*	*15*	*1*	*3*	*20*	*3*	*6*
Phys. Ed. II	*Phys. Ed.*	*30*	*25*	*1*	*2*	*15*	*1*	*2*	*20*	*3*	*6*

[1]If both day and night school are to be offered, fill out separate forms for each.
*Lecture/Demonstration
**Seminar
***Laboratory

FORM A

BASIC PROGRAM INFORMATION

1. Occupational Preparation Program _____
2. Yearly Enrollment _____
3. Nature of Students (underline appropriate categories): a. day school[1]; b. night school[1]; c. school age; d. adults; e. males; f. females; other (specify) _____
4. Weeks of Instruction per Year _____
5. Total Weekly Periods or Modules _____

Courses of Instruction	Content Areas	Total Course Enrollment	Maximum Group Sizes, Estimated Weekly Periods or Modules and Calculated Group-Modules or Period-Modules by Levels of Learning								
			REACTION*			INTERACTION**			ACTION***		
			Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

[1]If both day and night school are to be offered, fill out separate forms for each.
*Lecture/Demonstration
**Seminar
***Laboratory

FORM A

BASIC PROGRAM INFORMATION

1. Occupational Preparation Program _____
2. Yearly Enrollment _____
3. Nature of Students (underline appropriate categories): a. day school[1]; b. night school[1]; c. school age; d. adults; e. males; f. females; other (specify) _____
4. Weeks of Instruction per Year _____
5. Total Weekly Periods or Modules _____

Courses of Instruction	Content Areas	Total Course Enrollment	Maximum Group Sizes, Estimated Weekly Periods or Modules and Calculated Group-Modules or Period-Modules by Levels of Learning								
			REACTION*			INTERACTION**			ACTION***		
			Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

[1]If both day and night school are to be offered, fill out separate forms for each.
*Lecture/Demonstration
**Seminar
***Laboratory

FORM A

BASIC PROGRAM INFORMATION

1. Occupational Preparation Program _____
2. Yearly Enrollment _____
3. Nature of Students (underline appropriate categories): a. day school[1]; b. night school[1]; c. school age; d. adults; e. males; f. females; other (specify) _____
4. Weeks of Instruction per Year _____
5. Total Weekly Periods or Modules _____

Courses of Instruction	Content Areas	Total Course Enrollment	Maximum Group Sizes, Estimated Weekly Periods or Modules and Calculated Group-Modules or Period-Modules by Levels of Learning								
			REACTION*			INTERACTION**			ACTION***		
			Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

FORM A

[1]If both day and night school are to be offered, fill out separate forms for each.
*Lecture/Demonstration
**Seminar
***Laboratory

FORM A

BASIC PROGRAM INFORMATION

1. Occupational Preparation Program _____
2. Yearly Enrollment _____
3. Nature of Students (underline appropriate categories): a. day school[1]; b. night school[1]; c. school age; d. adults; e. males; f. females; other (specify) _____
4. Weeks of Instruction per Year _____
5. Total Weekly Periods or Modules _____

Courses of Instruction	Content Areas	Total Course Enrollment	Maximum Group Sizes, Estimated Weekly Periods or Modules and Calculated Group-Modules or Period-Modules by Levels of Learning								
			REACTION*			INTERACTION**			ACTION***		
			Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules	Maximum Group Size	Weekly Periods or Modules	Weekly Group-Periods or Modules
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

[1]If both day and night school are to be offered, fill out separate forms for each.
*Lecture/Demonstration
**Seminar
***Laboratory

PART III

DISTINCT TYPES OF INSTRUCTIONAL AREAS TO BE PROVIDED

QUANTITATIVE FACILITY NEEDS

The number of instructional areas to house the programs described in Part II (The Instructional Program) are recorded in this section of the guide.

As indicated in Part II, there are three principal types of instructional areas used to accomodate educational programs. They are:

Lecture/demonstration areas--used principally for group reaction learning;

Seminar areas--used principally for group interaction learning; and

Laboratory areas--used principally for group or individual action learning.

In addition to these instructional areas, there are, of course, other school-wide auxiliary areas such as instructional materials centers, language laboratories, gymnasiums, and auditoriums which are part of the overall school plan. Requirements for such facilities are calculated as a part of total school planning and are not made in this guide.

It is recommended that facility needs, including those for occupational preparation programs in business and office education, be made on a school-wide basis to provide planners with a balanced picture of the building to be constructed and to promote economy and convenience through the sharing and clustering of various kinds of facilities and equipment.

Forms B, C, and D can be used to compute the number of lecture/demonstration, seminar, and laboratory areas required, respectively, for the planned programs in business and office occupational preparation. The use of these forms requires some mathematical ability. Personnel responsible for completing the guide may want to utilize the services of individuals with this special competence.

Results of the computations on Forms B, C, and D are entered on Form E which is a summary of total instructional area requirements for business and office occupational preparation programs.

In the event that instructional area requirements are already determined (e.g., it has been decided that one combination laboratory and lecture/demonstration area will be provided) the information can be recorded directly on Form E without making the computations on Forms B, C, and D.

It is strongly recommended that appropriate personnel be utilized to ensure that the number of instructional areas meets program requirements. After the number of each type of instructional area is determined and recorded on Form E, information can then be recorded in the following sections of the guide concerning the nature of these instructional areas.

INSTRUCTIONS FOR COMPLETING FORM B
LECTURE/DEMONSTRATION AREA REQUIREMENTS BY CONTENT AREAS

Column 1

Content Area--Content areas are listed in Column 1.

Column 2

Total Enrollment--To obtain total enrollment for content areas, find the total enrollment for each content area as indicated in Columns 7 and 8 of Form A(s) for all occupational preparation programs.

Column 3

Maximum Group Size--Opposite each content area, enter the maximum group size desired for a lecture/demonstration area to serve the content area (Form A, Column 9).

Column 4

Total Weekly Periods or Modules--Opposite each content area, enter the total periods or modules per week the school will be open for day school instruction. This entry will be identical for all content areas and identical to the number recorded for Item 5, Form A.

Column 5

Total Weekly Reaction Group Periods or Modules--Opposite each content area, enter the total group periods or modules per week to be devoted to reaction learning as indicated in Column 11 of Form A(s) for all occupational preparation programs.

Column 6

Lecture/Demonstration Areas Required--Opposite each content area, enter the quotient of Item 5 divided by Item 4. Round up to the nearest hundredth.

Column 7.

Adjusted Lecture/Demonstration Areas Required--To adjust for scheduling difficulties which result in areas being less than 100 percent utilized, multiply the entry in Column 6 by 1.3 and enter the result, rounded up to the nearest hundredth, in Column 7 for each content area.

Column 8

Totals--Since lecture/demonstration areas, unlike laboratory areas, can be utilized by nearly all content areas, the entries in Column 7 can be added for all lecture/demonstration areas with identical maximum group sizes as entered in Column 3. For example, 8a might read 2 lecture/demonstration areas with a student capacity of 50 each.

SAMPLE FORM B

LECTURE/DEMONSTRATION AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Reaction Group-Periods, Modules (5)	Lecture/Demonstration Areas Required (5) ÷ (4) (6)	Adjusted Lecture/Demonstration Areas Required (6) x 1.3 (7)
I. Accounting	*240*	*100*	*30*	*7*	*0.24*	*0.31*
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic	*120*	*50*	*30*	*6*	*0.20*	*0.26*
Science	*30*	*50*	*30*	*3*	*0.10*	*0.13*
Music						
Physical Education	*65*	*25*	*30*	*4*	*0.08*	*0.11*
Other (specify)						

(8) Totals (Figures in Column 7 can be added together for areas with same student capacity as entered in Column 3.) Round off total to next higher whole number.

a. *1* lecture/demonstration areas with a student capacity of *100*, each.
b. _____ lecture/demonstration areas with a student capacity of _____, each.
c. _____ lecture/demonstration areas with a student capacity of _____, each.
d. _____ lecture/demonstration areas with a student capacity of _____, each.

Note: The entries in Column 7 indicate clearly that the lecture/demonstration areas would only be used sparingly by students enrolled in each of the content areas. One possibility might be construction of a lecture/demonstration area with a student capacity of 100 which could be subdivided to meet program requirements of all content areas. Another possibility would be the sharing of lecture/demonstration with other students enrolled in various other programs.

FORM B

LECTURE/DEMONSTRATION AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Reaction Group-Periods, Modules (5)	Lecture/Demonstration Areas Required (5) ÷ (4) (6)	Adjusted Lecture/Demonstration Areas Required (6) x 1.3 (7)
I. Accounting						
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic						
Science						
Music						
Physical Education						
Other (specify)						

(8) Totals (Figures in Column 7 can be added together for areas with same student capacity as entered in Column 3.) Round off total to next higher whole number.

a. _____ lecture/demonstration areas with a student capacity of _____, each.
b. _____ lecture/demonstration areas with a student capacity of _____, each.
c. _____ lecture/demonstration areas with a student capacity of _____, each.
d. _____ lecture/demonstration areas with a student capacity of _____, each.

INSTRUCTIONS FOR COMPLETING FORM C
SEMINAR AREA REQUIREMENTS BY CONTENT AREAS

Column 1

Content Area--Content areas are listed in Column 1.

Column 2

Total Enrollment--To obtain total enrollment for content areas, find the total enrollment for each content area indicated in Column 7 and 8 of Form A for all occupational preparation programs.

Column 3

Maximum Group Size--Opposite each content area, enter the maximum group size desired for a seminar area to serve the content area (Form A, Column 12).

Column 4

Total Weekly Periods or Modules--Opposite each content area, enter the total periods or modules per week the school will be open for day school instruction. This entry will be identical for all content areas and identical to the number recorded for Item 5, Form A.

Column 5

Total Weekly Interaction Group Periods or Modules--Opposite each content area, enter the total group periods or modules per week to be devoted to interaction learning as indicated in Column 14 of Form A(s) for all occupational preparation programs.

Column 6

Seminar Areas Required--Opposite each content area, enter the quotient of Item 5 divided by Item 4. Round up to the nearest hundredth.

Column 7

Adjusted Seminar Areas Required--To adjust for scheduling difficulties which result in areas being less than 100 percent utilized, multiply the entry in Column 6 by 1.3 and enter the result, rounded up to the nearest hundredth, in Column 7 for each content area.

Column 8

Totals--Since seminar areas, unlike laboratory areas, can be commonly utilized by nearly all content areas, the entries in Column 8 can be added for all seminar areas with identical maximum group sizes or entered in Column 3. For example, 8a might read 2 seminar areas with a student capacity of 20, each.

SAMPLE FORM C

SEMINAR AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Interaction Group-Periods or Modules (5)	Seminar Areas Required (5) ÷ (4) (6)	Adjusted Seminar Areas Required (6) x 1.3 (7)
I. Accounting	*240*	*15*	*30*	*32*	*1.07*	*1.40*
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic	*120*	*15*	*30*	*28*	*0.94*	*1.22*
Science	*30*	*0*	*30*	*0*	*0*	*0*
Music						
Physical Education	*65*	*15*	*30*	*5*	*0.17*	*0.28*
Other (specify)						

SAMPLE FORM C

(8) Totals (Figures in Column 7 can be added together for areas with same student capacity as entered in Column 3.) Round up total to next higher whole number.

a. ___3___ seminar areas with a minimum student capacity of ___15___, each.
b. _____ seminar areas with a minimum student capacity of _____, each.
c. _____ seminar areas with a minimum student capacity of _____, each.
d. _____ seminar areas with a minimum student capacity of _____, each.

FORM C

SEMINAR AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Interaction Group-Periods or Modules (5)	Seminar Areas Required (5) ÷ (4) (6)	Adjusted Seminar Areas Required (6) x 1.3 (7)
I. Accounting						
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic						
Science						
Music						
Physical Education						
Other (specify)						

(8) Totals (Figures in Column 7 can be added together for areas with same student capacity as entered in Column 3.) Round up total to next higher whole number.

a. _____ seminar areas with a minimum student capacity of _____, each.
b. _____ seminar areas with a minimum student capacity of _____, each.
c. _____ seminar areas with a minimum student capacity of _____, each.
d. _____ seminar areas with a minimum student capacity of _____, each.

FORM C

INSTRUCTIONS FOR COMPLETING FORM D
LABORATORY AREA REQUIREMENTS BY CONTENT AREAS

Column 1
Content Area--Content areas are listed in Column 1.

Column 2
Total Enrollment--To obtain total enrollment for content areas, find the total enrollment for each area as indicated in Columns 7 and 8 of Form A for all occupational preparation programs.

Column 3
Maximum Group Size--Opposite each content area, enter the maximum group size desired for a laboratory area to serve the content area (Form A, Column 15).

Column 4
Total Weekly Periods or Modules--Opposite each content area, enter the total periods or modules per week the school will be open for day school instruction. This entry will be identical for all content areas and identical to the number recorded for Item 5, Form A.

Column 5
Total Weekly Action Group Periods or Modules--Opposite each content area, enter the total group periods or modules per week to be devoted to action learning as indicated in Column 17 of Form A(s) for all occupational preparation programs.

Column 6
Laboratory Areas Required--Opposite each content area, enter the quotient of Item 5 divided by Item 4. Round up to the nearest hundredth.

Column 7
Adjusted Laboratory Areas Required--To adjust for scheduling difficulties which result in areas being less than 100 percent utilized, multiply the entry in Column 6 by 1.3 and enter the result, rounded up to the nearest hundredth, in Column 7 for each content area.

SAMPLE FORM D

LABORATORY AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Action Group-Periods or Modules (5)	Laboratory Areas Required (5) ÷ (4) (6)	Adjusted Laboratory Areas Required (6) x 1.3 (7)
I. Accounting	*240*	*25*	*30*	*45*	*1.50*	*1.95*
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic	*120*	*0*	*30*	*0*	*0*	*0*
Science	*30*	*15*	*30*	*13*	*0.44*	*0.57*
Music						
Physical Education	*65*	*20*	*30*	*12*	*0.40*	*0.52*
Other (specify)						

SAMPLE FORM D

FORM D

LABORATORY AREA REQUIREMENTS BY CONTENT AREAS

Content Area (1)	Total Enrollment (2)	Maximum Group Size (3)	Total Weekly Periods or Modules (4)	Total Weekly Action Group-Periods or Modules (5)	Laboratory Areas Required (5) ÷ (4) (6)	Adjusted Laboratory Areas Required (6) x 1.3 (7)
I. Accounting						
II. Data Processing						
III. Model Office						
IV. Office Practice						
V. Shorthand						
VI. Typewriting						
Academic						
Science						
Music						
Physical Education						
Other (specify)						

FORM D

SAMPLE FORM E

SUMMARY OF FACILITY REQUIREMENTS FOR BUSINESS AND OFFICE OCCUPATIONAL PREPARATION PROGRAMS

	Instructional Areas (1)	Number Required* Calculated+ Forms B, C, D Column 7 (2)	Number Required* Next Higher Whole Number (3)	Required Student Capacity (4)
	Lecture/Demonstration	*0.31*	*1*	*100*
1	Lecture/Demonstration			
	Lecture/Demonstration			
	Lecture/Demonstration			
	Seminar	*2.90*	*3.00*	*15*
2	Seminar			
	Seminar			
	Seminar			
	Accounting Laboratory	*1.95*	*2.00*	*25*
3	Data Processing Laboratory			
	Model Office Laboratory			
	Office Practice Laboratory			
	Shorthand Laboratory			
	Typewriting Laboratory			
	_____ Laboratory			
	_____ Laboratory			

4 Multi-use areas

If any of the specialized areas entered above are to be combined as multi-use areas, indicate the combinations desired.

a. *1 accounting laboratory and 1 lecture/demonstration area*
b. _____
c. _____
d. _____

5 Summary of instructional areas requirements

Based on the above entries and any other considerations, summarize the total quantitative instructional area requirements for the planned program.

_____
_____
_____
_____
_____

*Enter the number of instructional areas needed for each required student capacity. If the calculated number required indicates that an area will be used only sparingly, consideration should be given to sharing lecture/demonstration areas and seminar areas with other training programs or to providing high student capacity areas which can be subdivided for instructional purposes.

+If calculations are not made, enter estimates of needs in Column 3.

FORM E

SUMMARY OF FACILITY REQUIREMENTS FOR BUSINESS AND OFFICE OCCUPATIONAL PREPARATION PROGRAMS

	Instructional Areas (1)	Number Required* Calculated+ Forms B, C, D Column 7 (2)	Number Required* Next Higher Whole Number (3)	Required Student Capacity (4)
	Lecture/Demonstration			
1	Lecture/Demonstration			
	Lecture/Demonstration			
	Lecture/Demonstration			
	Seminar			
2	Seminar			
	Seminar			
	Seminar			
	Accounting Laboratory			
3	Data Processing Laboratory			
	Model Office Laboratory			
	Office Practice Laboratory			
	Shorthand Laboratory			
	Typewriting Laboratory			
	_____ Laboratory			
	_____ Laboratory			

4 Multi-use areas

If any of the specialized areas entered above are to be combined as multi-use areas, indicate the combinations desired.

a. _____
b. _____
c. _____
d. _____

5 Summary of instructional areas requirements

Based on the above entries and any other considerations, summarize the total quantitative instructional area requirements for the planned program.

_____
_____
_____
_____
_____

*Enter the number of instructional areas needed for each required student capacity. If the calculated number required indicates that an area will be used only sparingly, consideration should be given to sharing lecture/demonstration areas and seminar areas with other training programs or to providing high student capacity areas which can be subdivided for instructional purposes.

+If calculations are not made, enter estimates of needs in Column 3.

QUALITATIVE FACILITY NEEDS

In this section, detailed information on the kind of instructional areas required is recorded. Special forms are included for describing the nature of lecture/demonstration areas, seminar areas, laboratory areas, and auxiliary areas to be provided. For each general type of instructional area, required information is sought in the following categories:

1. The relationship of the area to other instructional areas (specialized vs. multi-purpose utilization of space).

2. The number of these kinds of areas needed.

3. The activities of students and teachers in the instructional area.

4. The spatial relationships within the area and the area's spatial relationships to other instructional areas and the building as a whole.

5. The furniture and equipment required for the area.

6. The environmental factors required for the area.

7. The special utility services required for the area.

8. The minimum space requirements of the area.

FORM F

DESCRIPTION OF LECTURE/DEMONSTRATION AREA(S) TO BE USED PRINCIPALLY FOR GROUP REACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The lecture/demonstration area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with seminar area(s)	Yes	No
d. As an area within a single multi-use space	Yes	No

2. Number of lecture/demonstration areas required for the desired program regardless of student capacity (see Form E). _____

3. Student and instructor activities. Indicate the extent to which each of the activities listed below will occur.

a. Listening to lectures	1	2	3	N
b. Observing demonstrations	1	2	3	N
c. Taking notes	1	2	3	N
d. Viewing films, slides, overhead projections, etc.	1	2	3	N
e. _____	1	2	3	N
f. _____	1	2	3	N

4. Spatial relationships. Indicate the extent to which the lecture/demonstration area(s) should be accessible to the:

a. Instructional materials center	1	2	3	N
b. Building entrance	1	2	3	N
c. Delivery area	1	2	3	N
d. Other instructional areas				
1) _____	1	2	3	N
2) _____	1	2	3	N
3) _____	1	2	3	N
e. Other building areas				
1) _____	1	2	3	N
2) _____	1	2	3	N
3) _____	1	2	3	N

5. Furniture and equipment

a. Student seating

1) Individual desks and chairs — P A NA*
   a) Number of desks and chairs required _____
   b) Provision for storage — Yes No
2) Permanent-type desk — P A NA
   a) Number required _____
   b) Provision for storage — Yes No
3) Desk and chair combination — P A NA
   a) Number required _____
   b) Provision for storage — Yes No
4) Tables and chairs — P A NA
   a) Number of tables required _____
   b) Number of chairs required _____
   c) Provision for storage — Yes No
5) Auditorium-type seating — P A NA
   Number of seats required _____

b. Stage — Yes No
   1) Permanent type — P A NA
   2) Portable type — P A NA
      The approximate area in square feet desired _____
c. Sound amplifying system — P A NA
d. Controls for regulating light intensity — P A NA
e. Lectern
   1) Permanent type — P A NA
   2) Portable type — P A NA
   3) Provision for storage — Yes No
f. Projection screen
   1) Built-in type — P A NA
   2) Portable type — P A NA
   3) Approximate dimensions _____
   4) Provision for storage — Yes No
g. Other equipment required for lecture/ demonstration area(s) are:
   1) _____
   2) _____
   3) _____
   4) _____

6. Environmental factors

   a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the lecture/ demonstration area(s).

_____
_____
_____
_____

*Code: P = Preferred; A = Acceptable; NA = Not Acceptable. This scale is used frequently on the following pages.

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the lecture/demonstration area(s).

_____
_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the lecture/demonstration area(s).

_____
_____
_____
_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound systems. Indicate any special consideration important to the planning of the lecture/demonstration area(s).

_____
_____
_____
_____

e. Safety. In planning a school building, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the lecture/demonstration area(s).

_____
_____
_____
_____

7. Vertical instructional surfaces

a. Chalkboard	Yes	No
1) Wall-mounted	P A	NA
2) Number of lineal feet	_____	
3) Portable	P A	NA
4) Provision for storage	Yes	No
b. Tackboard	Yes	No
Number of lineal feet	_____	
c. Pegboard	Yes	No
Number of lineal feet	_____	

8. Special utility services required

a. Electricity

1) Projection equipment Yes No
2) Sound amplifying equipment Yes No
3) Electrical needs for other equipment (specify) Yes No
   a) _____
   b) _____
   c) _____
   d) _____

b. Other utility needs for the lecture/demonstration area
   1) _____
   2) _____
   3) _____
   4) _____

9. The minimum space requirement in square feet for each lecture/demonstration area (optional). _____ (The planner should be aware of any state or local regulation or recommendations concerning floor space requirements.)

10. Other important factors to be considered in the planning of the lecture/demonstration area(s) are:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

FORM G

DESCRIPTION OF SEMINAR AREA(S) TO BE USED
PRINCIPALLY FOR GROUP INTERACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The seminar area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ (specify) laboratory area(s)	Yes	No
c. In combination with lecture/demonstration area(s)	Yes	No
d. As an area within a single multi-purpose space	Yes	No

2. The number of seminar area(s) required for the desired program regardless of capacity (see Form E) _____

3. Student and instructor activities in this space. Indicate the extent to which each of the activities listed below will occur.

a. Small group discussing	1	2	3	N
b. Viewing films, slides, overhead projections, etc.	1	2	3	N
c. Demonstrating	1	2	3	N
d. Reporting	1	2	3	N
e. Working on projects	1	2	3	N
f. _____	1	2	3	N
g. _____	1	2	3	N

4. Spatial relationships. Indicate the extent to which the seminar area(s) should be accessible to the:

a. Instructional materials center	1	2	3	N
b. Building entrance	1	2	3	N
c. Delivery area	1	2	3	N
d. Other instructional areas				
1) _____	1	2	3	N
2) _____	1	2	3	N
3) _____	1	2	3	N
e. Other building areas				
1) _____	1	2	3	N
2) _____	1	2	3	N
3) _____	1	2	3	N

5. Furniture and equipment

a.	Seminar table	Yes		No
	1) Number required	_____		
	2) Seating for how many persons	_____		
	3) Permanent type	P	A	NA
	4) Portable type	P	A	NA
	5) Provision for storage	Yes		No
b.	Chairs	Yes		No
	1) Number required	_____		
	2) Straight-back type	P	A	NA
	3) Folding type	P	A	NA
	4) Provision for storage	Yes		No

c. Other equipment required for seminar area(s) are:
   1) _____
   2) _____
   3) _____

6. Environmental factors

   a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of seminar areas.

   _____
   _____
   _____

   b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the seminar area(s).

   _____
   _____
   _____

   c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the seminar area(s).

   _____
   _____
   _____

   d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound system. Indicate any special considerations important to the planning of the seminar area(s).

   _____
   _____
   _____

e. Safety. In planning a school building, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the seminar area(s).

_____

_____

_____

7. Vertical instructional surfaces

a. Chalkboard	Yes	No
1) Wall-mounted	P A	NA
2) Number of lineal feet	_____	
3) Portable	P A	NA
4) Provision for storage	Yes	No
b. Tackboard	Yes	No
Number of lineal feet	_____	
c. Pegboard	Yes	No
Number of lineal feet	_____	

8. Special utility services required

a. Electricity		
1) Projection equipment	Yes	No
2) Sound amplifying equipment	Yes	No
3) Electrical needs for other equipment (specify)		

_____

_____

_____

_____

b. Other utility needs for the seminar area(s)

1) _____

2) _____

3) _____

4) _____

9. Minimum space requirement in square feet for each seminar area (optional). _____ (The planner should be aware of any state or local regulations or recommendations concerning floor space requirements.)

10. Other important factors to be considered in the planning of the seminar area(s) are:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

FORM H

DESCRIPTION OF ACCOUNTING LABORATORY AREA(S)
TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The Accounting Laboratory Area(s) should be planned:

a.	As independent unit(s)	Yes	No
b.	In combination with _____ laboratory area(s) (specify)	Yes	No
c.	In combination with seminar area(s)	Yes	No
d.	In combination with lecture/demonstration area(s)	Yes	No
e.	As an area within a single multi-purpose space	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities in various space divisions within the accounting laboratory area(s). Indicate the extent to which each activity will occur.

a.	Classroom space				
	1) Working practice sets	1	2	3	N
	2) Using textbooks and workbooks	1	2	3	N
	3) Observing flannel board, chalkboard, and other audiovisual presentations	1	2	3	N
	4) Class discussions	1	2	3	N
	5) Lecture by teachers	1	2	3	N
	6) _____	1	2	3	N
	7) _____	1	2	3	N
b.	Reference space				
	1) Illustration of forms and entries	1	2	3	N
	2) Depreciation schedules	1	2	3	N
	3) Description of business practices	1	2	3	N
	4) Tax problems	1	2	3	N
	5) _____	1	2	3	N
	6) _____	1	2	3	N
c.	Business machines space				
	1) Operation of machines is taught before use	1	2	3	N
	2) Machines are used with discretion	1	2	3	N
	3) _____	1	2	3	N
	4) _____	1	2	3	N

4. Furniture and equipment

a. Instructor's desk

1) Single-pedestal — P A NA
2) Double-pedestal — P A NA
3) Further description

_____
_____

b. Filing cabinet(s)
Letter-size drawers — P A NA
Number of drawers required
_____

c. Student chairs
1) Straight-back type — P A NA
Number required
_____
2) Posture type (to be placed at the tables where business machines are located) — P A NA
Number required
_____

d. Student desks or tables
Rectangular — P A NA
a) Number required
b) Size (length and width)
_____
_____
c) Further description
_____
_____

e. Tables for business machines
Rectangular — P A NA
a) Number required
b) Size (length and width)
_____
_____
c) Further description
_____
_____

f. Business machines
1) Adding-listing machines — P A NA
a) Number required
_____
b) Provision for storage required — Yes No
c) Further description
_____
2) Bookkeeping and accounting machines — P A NA
a) Number required
_____
b) Provision for storage required — Yes No
c) Further description
_____
_____

g. Classroom library shelving
Fixed, open shelving — P A NA
Lineal feet required
_____

h. Projection screen
1) Wall-mounted — Yes No
2) Further description
_____
_____

i. Provision for darkening area(s)
   1) Opaque blinds P A NA
   2) Flexible room partitions P A NA
   Provision for storage Yes No

j. Other major equipment needs for the accounting laboratory area(s).

_____
_____
_____
_____
_____
_____

5. Environmental factors

a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the accounting laboratory area(s).

_____
_____
_____

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the accounting laboratory area(s).

_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the accounting laboratory area(s).

_____
_____
_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound system. Indicate any special considerations important to the planning of the accounting laboratory area(s).

_____
_____
_____

e. Safety. In planning school buildings, safety for students and instructors is of prime concern. Indicate any special

safety considerations which have implications of the accounting laboratory area(s).

_____

_____

_____

6. Vertical instructional surfaces

a.	Chalkboard (wall-mounted)	Yes	No
	Number of lineal feet		
b.	Tackboard	Yes	No
	Number of lineal feet		
c.	Pegboard	Yes	No
	Number of lineal feet		

7. Minimum space requirements in square feet

a. Floor area in square feet for entire accounting laboratory area_____

b. If distinct space divisions are desired according to function, give minimum floor area requirements in square feet for each of the following areas if included in desired program.

1)	Classroom space	_____
2)	Reference space	_____
3)	Business machine space	_____
4)	_____	_____
5)	_____	_____

8. Other important factors to be considered in the planning of the accounting laboratory area(s) are:

_____

_____

_____

_____

_____

_____

_____

_____

_____

FORM I

DESCRIPTION OF DATA PROCESSING LABORATORY AREA(S)
TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The data processing laboratory area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with seminar area(s)	Yes	No
d. In combination with lecture/demonstration area(s)	Yes	No
e. As an area within a single multi-purpose area(s)	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities in various space divisions within the data processing laboratory area(s). Indicate the extent to which each activity will occur.

a. Classroom space				
1) History of data processing	1	2	3	N
2) Effect of data processing on the economy	1	2	3	N
3) Extensiveness of data processing	1	2	3	N
4) Data processing and the paper explosion	1	2	3	N
5) Employment opportunities	1	2	3	N
6) _____	1	2	3	N
7) _____	1	2	3	N
b. Laboratory space				
1) Common language media	1	2	3	N
2) Unit record equipment	1	2	3	N
3) Computers	1	2	3	N
4) Programming	1	2	3	N
5) _____	1	2	3	N
6) _____	1	2	3	N

4. Furniture and equipment

a. Instructor's desk			
1) Single-pedestal	P	A	NA
2) Double-pedestal	P	A	NA
3) Further description			
_____			
_____			

b. Filing cabinet(s)
   1) Letter-size drawers — P A NA
      Number of drawers required _____
   2) Card-file drawers — P A NA
      Number of drawers required _____

c. Student chairs
   1) Straight-back type — P A NA
      Number required _____
   2) Posture type — P A NA
      Number required _____

d. Student desks or tables
   Rectangular — P A NA
   a) Number required _____
   b) Size (length and width)
   _____
   _____
   c) Further description
   _____
   _____

e. Panels
   1) Automatic punch (reproducing punch) — P A NA
      a) Number required _____
      b) Further description
      _____
      _____
   2) Accounting machine — P A NA
      a) Number required _____
      b) Further description
      _____
      _____

f. Panel storage racks — P A NA
   1) Number required _____
   2) Further description
   _____
   _____

g. Key punch(es) (card punch) — P A NA
   1) Number required _____
   2) Further description
   _____
   _____

h. Typewriter(s) with assimilator attachments — P A NA
   1) Number required _____
   2) Further description
   _____
   _____

i. Verifier(s) — P A NA
   1) Number required _____
   2) Further description
   _____
   _____

j. Sorter(s) — P A NA
   1) Number required _____
   2) Further description
   _____
   _____

k. Interpreter(s) P A NA
   1) Number required
   2) Further description

   _____
   _____

l. Automatic punch(es) (reproducing punch) P A NA
   1) Number required
   2) Further description

   _____
   _____

m. Collator(s) P A NA
   1) Number required
   2) Further description

   _____
   _____

n. Accounting machine(s) P A NA
   1) Number required
   2) Further description

   _____
   _____

o. Computer(s) P A NA
   1) Number required
   2) Further description

   _____
   _____

p. Other major equipment needs for the data processing area(s).

   _____
   _____
   _____
   _____

5. Environmental factors

   a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the data processing laboratory area(s).

      _____
      _____
      _____

   b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the data processing laboratory area(s).

      _____
      _____
      _____

   c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects

2

such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the data processing laboratory area(s).

_____

_____

_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound system. Indicate any special considerations important to the planning of the data processing laboratory area(s).

_____

_____

_____

e. Safety. In planning school buildings, safety for students and instructors is of prime concern. Indicate any special considerations which have implications for design of the data processing laboratory area(s).

_____

_____

_____

6. Vertical instructional surfaces

a. Chalkboard (wall-mounted)	Yes	No
Number of lineal feet		
b. Tackboard	Yes	No
Number of lineal feet		
c. Pegboard	Yes	No
Number of lineal feet		

7. Minimum floor areas required in square feet

a. Floor area in square feet for the entire data processing laboratory area____

_____

b. If distinct space divisions are desired according to function give minimum floor area requirements in square feet for each of the following areas if included in the desired program.

1) Classroom space	_____
2) Laboratory space	_____
3) _____	_____
4) _____	_____

8. Other important factors to be considered in the planning of the data processing laboratory area(s) are:

_____

_____

_____

_____

FORM J

DESCRIPTION OF MODEL OFFICE LABORATORY AREA(S) TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The model office laboratory area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with seminar area(s)	Yes	No
d. In combination with lecture/demonstration area(s)	Yes	No
e. As an area within a single multi-purpose space	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities in various space divisions within the model office laboratory area(s). Indicate the extent to which each activity will occur.

a. Practical typing problems	1	2	3	N
b. Transcribing correspondence	1	2	3	N
c. Preparing photocopies	1	2	3	N
d. Typing stencils, master sheets, and mats	1	2	3	N
e. Answer telephone	1	2	3	N
f. _____	1	2	3	N
g. _____	1	2	3	N

4. Furniture and equipment

a. Filing cabinet(s)			
1) Letter-size drawers	P	A	NA
Number of drawers required _____			
2) Legal-size drawers	P	A	NA
Number of drawers required _____			
b. Executive desk and chair	P	A	NA
1) Number required _____			
2) Description _____			
_____			
c. Secretarial desk and chair	P	A	NA
1) Number required _____			
2) Description _____			
_____			

d. Pigeon-hole mail box P A NA
Description

_____
_____

e. Ten-key adding-listing machine(s) P A NA
1) Number required
2) Electric Yes No

f. Transcribing machine(s) P A NA
1) Number required
2) Provision for storage required Yes No
3) Further description

_____
_____

g. Typewriters P A NA
Standard electric Yes No
Number required

h. Photocopy machine P A NA
1) Number required
2) Provision for storage required Yes No
3) Further description

_____
_____

i. Other major equipment needs for the model office laboratory area(s).

_____
_____
_____
_____
_____

5. Environmental factors

a. Aesthetic. Factors to be considered in the aesthetic domain are color, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the model office laboratory area(s).

_____
_____
_____

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the model office laboratory area(s).

_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual

environment of the model office laboratory area(s).

_____
_____
_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound system. Indicate any special considerations important to the planning of the model office laboratory area(s).

_____
_____
_____

e. Safety. In planning school buildings, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the model office laboratory area(s).

_____
_____
_____

6. Vertical instructional surfaces

a. Chalkboard (wall-mounted)	Yes	No
Number of lineal feet		
b. Tackboard	Yes	No
Number of lineal feet		
c. Pegboard	Yes	No
Number of lineal feet		

7. Minimum space requirement
In square feet for the model office laboratory area(s) _____

8. Other important factors to be considered in the planning of the model office laboratory area(s) are:

_____
_____
_____
_____
_____
_____
_____
_____
_____

FORM K

DESCRIPTION OF OFFICE PRACTICE LABORATORY AREA(S) TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The office practice laboratory area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with seminar area(s)	Yes	No
d. In combination with lecture/demonstration area(s)	Yes	No
e. As an area within a single left-type space	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities within the office practice laboratory area(s). Indicate the extent to which each activity will occur.

a. Ten-key adding-listing machine space				
1) Check recorded figures	1	2	3	N
2) Use of machine for addition and subtraction	1	2	3	N
3) Doing business problems, such as adding the amounts on a given number of checks	1	2	3	N
4) Operate by touch system	1	2	3	N
5) Using job instruction sheets	1	2	3	N
6) _____	1	2	3	N
7) _____	1	2	3	N
b. Full-key adding-listing machine space				
1) Check recorded figures	1	2	3	N
2) Use of machine for addition and subtraction	1	2	3	N
3) Doing business problems, such as adding the amounts on a given number of checks	1	2	3	N
4) Using job instruction sheets	1	2	3	N
5) _____	1	2	3	N
6) _____	1	2	3	N
c. Rotary calculator space				
1) Understanding of a somewhat intricate machine	1	2	3	N
2) Perform all fundamental processes	1	2	3	N
3) Work with fractions, percents, and decimals	1	2	3	N

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

4)	Using job instruction sheets	1	2	3	N
5)	_____	1	2	3	N
6)	_____	1	2	3	N
d.	Key-driven calculator space (machine used if there is a demand for key-driven operators in employment area)				
1)	Perform all fundamental processes	1	2	3	N
2)	Work with fractions, percents, and decimals	1	2	3	N
3)	Operate by touch system	1	2	3	N
4)	Using job instruction sheets	1	2	3	N
5)	_____	1	2	3	N
6)	_____	1	2	3	N
e.	Printing calculator space				
1)	Check recorded figures	1	2	3	N
2)	Work all types of business mathematics problems	1	2	3	N
3)	Operate by touch system	1	2	3	N
4)	Using job instruction sheets	1	2	3	N
5)	_____	1	2	3	N
6)	_____	1	2	3	N
f.	Transcribing machine space				
1)	Taking dictation from different voices	1	2	3	N
2)	Developing a better knowledge of the fundamentals of grammar	1	2	3	N
3)	Using job instruction sheets	1	2	3	N
4)	_____	1	2	3	N
5)	_____	1	2	3	N
g.	Duplicating machine space				
1)	Type stencils, master sheets, and mats	1	2	3	N
2)	Prepare material similar to that used in an office situation	1	2	3	N
3)	Using job instruction sheets	1	2	3	N
4)	_____	1	2	3	N
5)	_____	1	2	3	N
h.	Bookkeeping and accounting machine space				
1)	Understanding of how machines operate	1	2	3	N
2)	Work some simplified bookkeeping problems	1	2	3	N
3)	Using job instruction sheets	1	2	3	N
4)	_____	1	2	3	N
5)	_____	1	2	3	N

4. Furniture and equipment

a.	Instructor's desk			
1)	Single-pedestal	P	A	NA
2)	Double-pedestal	P	A	NA

K

3) Further description

_____

_____

b. Filing cabinet(s)
Letter-size drawers — P A NA
Number of drawers required _____

c. Student chairs
1) Straight-back type — P A NA
Number required _____
2) Posture type (to be placed at the tables where business machines are located) — P A NA
Number required _____

d. Student desks or tables
1) "L" shaped — P A NA
a) Number required
b) Size (length and width) _____
_____
c) Further description _____
_____
2) Rectangular — P A NA
a) Number required
b) Size (length and width) _____
_____
c) Further description _____
_____

e. Ten-key adding-listing machine(s) — P A NA
1) Number required _____
2) Electric — Yes No
3) Provision for storage required — Yes No
4) Further description _____
_____

f. Full-key adding-listing machine(s) — P A NA
1) Number required _____
2) Electric — Yes No
3) Provision for storage required — Yes No
4) Further description _____
_____

g. Rotary calculator(s) — P A NA
1) Number required _____
2) Electric — Yes No
3) Provision for storage required — Yes No
4) Further description _____
_____

h. Key-driven calculator(s) (machine used if there is a demand for key-driven operators in employment area) — P A NA
1) Number required _____

2) Electric — Yes No
3) Provision for storage required — Yes No
4) Further description

_____

i. Printing calculator(s) — P A NA
1) Number required
2) Provision for storage required — Yes No
3) Further description

_____

j. Transcribing machine(s) — P A NA
1) Number required
2) Provision for storage required — Yes No
3) Further description

_____

k. Duplicating machine(s)
1) Fluid duplicator — P A NA
a) Number required
b) Provision for storage required — Yes No
c) Further description

_____

2) Offset duplicator — P A NA
a) Number required
b) Provision for storage required — Yes No
c) Further description

_____

3) Stencil duplicator — P A NA
a) Number required
b) Provision for storage required — Yes No
c) Further description

_____

l. Drawing board including lettering guides, screen plates, and styli — P A NA
1) Number required
2) Provision for storage required — Yes No
3) Further description

_____

m. Photocopy machine(s) — P A NA
1) Number required
2) Provision for storage required — Yes No
3) Further description

_____

n. Typewriters
1) Standard electric(s) (to be used in conjunction with duplicating equipment and transcribing machines) — P A NA
a) Number required

b) Provisions for storage — Yes No
c) Further description

_____

2) Long carriage electric(s) (to be used in conjunction with duplicating equipment) — P A NA
a) Number required
b) Provisions for storage — Yes No
c) Further description

_____

o. Bookkeeping and accounting machine(s) — P A NA
1) Number required
2) Provision for storage required — Yes No
3) Further description

_____

p. Classroom library shelving
Fixed, open shelving — P A NA
Lineal feet required

q. Magazine racks — P A NA
1) Number required
2) Provision for storage — Yes No

r. Lavatories — P A NA
1) Number required
2) Further description

_____

s. Other furniture and equipment for the office practice laboratory area(s) are (give descriptions and quantities)

_____
_____
_____
_____
_____
_____
_____
_____

5. Environmental factors

a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the office practice laboratory area(s).

_____
_____
_____

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity,

and ventilation. Indicate any special considerations important to the planning of the office practice laboratory area(s).

_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the office practice laboratory area(s).

_____
_____
_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound systems. Indicate any special considerations important to the planning of the office practice laboratory area(s).

_____
_____
_____

e. Safety. In planning a school building, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the office practice laboratory area(s).

_____
_____
_____

6. Vertical instructional surfaces

a. Chalkboard (wall-mounted)	Yes	No
Number of lineal feet		_____
b. Tackboard	Yes	No
Number of lineal feet		_____
c. Pegboard	Yes	No
Number of lineal feet		_____

7. Minimum floor areas required in square feet

a. Floor area in square feet for the entire office practice laboratory area(s)	_____
b. If distinct space divisions are desired according to function, give minimum floor area requirement in square feet for each of the following areas, if included in the desired program.	
1) Ten-key adding-listing machine space	_____
2) Full-key adding-listing machine space	_____
3) Rotary calculator space	_____
4) Key-driven calculator space	_____

5) Printing calculator space _____
6) Transcribing machine space _____
7) Duplicating machine space _____
8) Bookkeeping and accounting machine space _____
9) _____ _____
10) _____ _____

8. Other important factors to be considered in the planning of the office practice laboratory area(s) are:

_____
_____
_____
_____
_____
_____

FORM L

DESCRIPTION OF SHORTHAND LABORATORY AREAS
TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The shorthand laboratory area(s) should be planned:

a. As an independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with seminar area(s)	Yes	No
d. In combination with lecture/demonstration area(s)	Yes	No
e. As an area within a single multi-purpose space	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities in various space divisions within the shorthand laboratory area(s). Indicate the extent to which each activity will occur.

a. Take dictation	1	2	3	N
b. Transcribe dictation material on the typewriter	1	2	3	N
c. Proofread	1	2	3	N
d. Correct errors	1	2	3	N
e. Handle materials	1	2	3	N
f. Use reference sources	1	2	3	N
g. _____	1	2	3	N
h. _____	1	2	3	N

4. Furniture and equipment

a. Instructor's desk			
1) Single-pedestal	P	A	NA
2) Double-pedestal	P	A	NA
3) Further description			
_____			
_____			
b. Filing cabinet(s)			
Letter-size drawers	P	A	NA
Number of drawers required _____			
c. Student chairs			
1) Posture type	P	A	NA
Number required _____			
2) Straight-back type	P	A	NA
Number required _____			

L

d. Student desks or tables
   1) "L" shaped — P A NA
      a) Number required
      b) Size (length and width)
      _____
      _____
      c) Further description
      _____
      _____
   2) Rectangular — P A NA
      a) Number required
      b) Size (length and width)
      _____
      _____
      c) Further description
      _____
      _____

e. Typewriters
   1) Standard electric — Yes No
      Number required
   2) Provisions for storage — Yes No
   3) Further description
      _____
      _____

f. Copyholders
   1) Number required
   2) Provision for storage — Yes No
   3) Further description
      _____
      _____

g. Multiple-channel dictation laboratory
   1) Wired system — Yes No
      Further description
      _____
      _____
   2) Wireless system — Yes No
      Further description
      _____
      _____

h. Supplementary equipment
   1) Overhead projector — P A NA
      a) Number required
      b) Provision for storage — Yes No
   2) Record player — P A NA
      a) Number required
      b) Provision for storage — Yes No
   3) Tape recorder — P A NA
      a) Number required
      b) Provision for storage — Yes No

i. Classroom library shelving
   Fixed, open shelving — P A NA
      Lineal feet required
      _____

j. Other equipment required for the shorthand laboratory area(s). Give description in quantities:

_____
_____
_____
_____

5. Environmental factors

a. Aesthetic. Factors to be considered in the aesthetic are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the shorthand laboratory area(s).

_____
_____
_____

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the shorthand laboratory area(s).

_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the shorthand laboratory area(s).

_____
_____
_____

d. Sonic. Factors to be considered in this cateogry include such things as acoustical requirements and sound system. Indicate any special considerations important to the planning of the shorthand laboratory area(s).

_____
_____
_____

e. Safety. In planning school buildings, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the shorthand area(s).

_____
_____
_____

6. Vertical instructional surfaces

FORM L

a. Chalkboard (wall-mounted) Yes No
   Number of lineal feet _____
b. Tackboard Yes No
   Number of lineal feet _____
c. Pegboard Yes No
   Number of lineal feet _____

7. Minimum space requirement

   In square feet for the shorthand laboratory area(s). _____

8. Other important factors to be considered in the planning of the shorthand laboratory areas are:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

FORM M

DESCRIPTION OF TYPEWRITING LABORATORY AREA(S)
TO BE USED PRINCIPALLY FOR ACTION LEARNING

1 major emphasis
2 some emphasis
3 slight emphasis
N no emphasis

1. The typewriting laboratory area(s) should be planned:

a. As independent unit(s)	Yes	No
b. In combination with _____ laboratory area(s) (specify)	Yes	No
c. In combination with lecutre/demonstration area(s)	Yes	No
d. In combination with seminar area(s)	Yes	No
e. As an area within a single left-type space	Yes	No

2. Student capacity required for scheduled activities (see Form E) _____

3. Student and instructor activities within the typewriting laboratory area(s). Indicate the extent to which each activity will occur.

a. Accuracy	1	2	3	N
b. Reasonable speed	1	2	3	N
c. Handling of materials such as paper, erasers, and carbon	1	2	3	N
d. Production of correspondence	1	2	3	N
e. Tabulations	1	2	3	N
f. Manuscripts	1	2	3	N
g. _____	1	2	3	N
h. _____	1	2	3	N

4. Furniture and equipment

a. Instructor's desk			
1) Single-pedestal	P	A	NA
2) Double-pedestal	P	A	NA
3) Further description _____ _____			
b. Filing cabinet(s)			
Letter-size drawers	P	A	NA
Number required _____			
c. Student chairs			
Posture type	P	A	NA
Number required _____			
d. Student desks or tables			
1) "L" shaped	P	A	NA
a) Number required _____			

M

b) Size (length and width)

_____

_____

c) Further description

_____

_____

2) Rectangular P A NA
a) Number required _____
b) Size (length and width)

_____

_____

c) Further description

_____

_____

e. Typewriters
1) Standard electric P A NA
Number required _____
2) Provision for storage Yes No
3) Further description

_____

_____

f. Copyholders
1) Number required _____
2) Provision for storage Yes No
3) Further description

_____

_____

g. Supplementary equipment
1) Diatype P A NA
a) Number required _____
b) Provision for storage Yes No
2) Dictation machines P A NA
a) Number required _____
b) Provision for storage Yes No
3) Record player P A NA
a) Number required _____
b) Provision for storage Yes No
4) Strong-pacer P A NA
a) Number required _____
b) Provision for storage Yes No
5) Tape recorder P A NA
a) Number required _____
b) Provision for storage Yes No

h. Other furniture and equipment for the typewriting laboratory area(s) are (give descriptions and quantities):

_____

_____

_____

_____

_____

_____

_____

5. Environmental factors

a. Aesthetic. Factors to be considered in the aesthetic domain are colors, light, style of architecture, design and the like. Indicate any special aesthetic considerations important to the planning of the typewriting laboratory area(s).

_____
_____
_____

b. Aerial. Factors to be considered in this category include air temperature, radiant temperature, relative humidity, and ventilation. Indicate any special considerations important to the planning of the typewriting laboratory area(s).

_____
_____
_____

c. Visual. A properly controlled and balanced visual environment is important. The visual environment affects such things as accuracy in perception, attention to tasks, and speed of performance. Indicate any special factors which should be taken into account in planning the visual environment of the typewriting laboratory area(s).

_____
_____
_____

d. Sonic. Factors to be considered in this category include such things as acoustical requirements and sound systems. Indicate any special considerations important to the planning of the typewriting laboratory area(s).

_____
_____
_____

e. Safety. In planning a school building, safety for students and instructors is of prime concern. Indicate any special safety considerations which have implications for design of the typewriting laboratory area(s).

_____
_____
_____

6. Vertical instructional surfaces

a. Chalkboard (wall-mounted)	Yes	No
Number of lineal feet	_____	
b. Tackboard	Yes	No
Number of lineal feet	_____	
c. Pegboard	Yes	No
Number of lineal feet	_____	

7. Minimum space requirement in square feet for the typewriting laboratory area(s).

_____

8. Other important factors to be considered in the planning of the typewriting laboratory area(s) are:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

FORM N

ADDITIONAL PLANNING CONSIDERATIONS

Other important factors to be considered in the overall planning and design of instructional areas for the planned business and office occupational preparation program(s) are:

N

PART IV

ANNOTATED BIBLIOGRAPHY

GENERAL FACILITY PLANNING

American Association of School Administrators. Planning America's School Buildings. Washington, D.C.: The Association, 1960.

Contributors to this publication were teachers, supervisors, administrators, architects, engineers, school board members, and school plant planning specialists. In addition to background material on school house construction, the book deals with specific topics including school surveys, analysis and computation of space and facility needs, enrollment projections, building designs, site selection, finance, and building maintenance and operation. Many pictures and illustrations are found, along with sample forms and outlines, which can be used in the facility planning process. No special consideration is given to unique problems faced in the planning for vocational and technical education facilities.

Boles, Harold W. Step by Step to Better School Facilities. New York: Holt, Rinehart, and Winston, 1965.

A textbook on overall planning procedures for new and improved school facilities. The typical topics (school surveys, building planning, site selection and acquisition, architectural planning, contracting for construction, and the equipping and furnishing of buildings) are covered. The only mention of vocational schools is on page 270 where the author quotes from another source:

> Vocational training should be de-emphasized in the schools since this training often becomes obsolete before it can be used; also, special "trade" and "vocational" schools should be discontinued, unless the vocational curriculum is liberal in approach and broad in character. Such schools are often used as dumping grounds for students who are not wanted elsewhere and often more than custodial care is provided for them. When more is provided, the skills taught are frequently too partial in nature.

Conrad, M. J. Four Steps to New Schools. Columbus, Ohio: Educational Administration and Facilities Division of the Bureau of Educational Research and Service, The Ohio State University.

A book prepared for the inexperienced school planner. The author emphasizes that a school building is an educational tool and should be designed to do the job it is intended to do. The four steps discussed are: 1) district-wide building survey; 2) educational planning; 3) architectural planning and construction; and 4) moving in and settling down. A glossary of important terms used in plant planning is located in the back of the book.

Conrad, M. J.; Wohlers, E. E.; and Griggs, Norman. School Plant Planning: An Annotated Bibliography. Columbus, Ohio: The Administration and Facilities Unit, School of Education, The Ohio State University, 1968.

A compilation of references in the following categories: general references; periodicals, overview of school plant field, district wide building survey, educational planning, the architect and his work, moving in and settling down, and related topics.

Finchum, R. N. Extended Use of School Facilities. Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1967.

This manual is intended to assist officials of school districts who are planning programs for maximum use of school properties and who must develop policies and regulations for efficient management of such programs. Various schedules of facility use are illustrated for nine different school systems.

Green, Alan C. Educational Facilities with New Media. Washington, D. C.: Department of Audiovisual Instruction, National Education Association, 1966.

This work is designed to meet the needs of three distinct groups interested in providing educational facilities. Report A: "A Guide for Policy Makers" is directed to boards, administrators, planning committees, and institutional planners. Report B: "A Guide for the Design of Professions" is designed for architects, planners, and design specialists and planning committees; and Report C: "A Technical Guide" is intended for design-architects, engineers, equipment and furniture suppliers, and media specialists.

National Council on School House Construction. NCSC Guide for Planning Plants. East Lansing, Michigan: The Council, 1964.

A basic reference on school plant planning and construction for use by superintendents, school board members, school plant planners, state department of education personnel, local school system officials, collegiate institutions, architects, lay advisory groups, and graduate students. Major topics covered are: planning and programming educational plants; spaces and

equipment for learning; non-instructional systems; space organization and economy and resources. Much attention is given to plant planning through a description of a survey technique used to determine and satisfy school plant needs for a community. Site selection, kinds of instructional spaces, sonic, termal, and visual environments, and best use of natural and plant resources are also treated.

North Carolina. Department of Public Instruction. A Digest of Educational Planning. Raleigh, North Carolina: The Department.

The contents of this book include a description of what educational planning is, when it is done, who does it, and how it is done. The three steps of planning are identified as: 1) identification and analysis of educational and facility needs, 2) adapting and implementing plant improvement programs, and 3) completing and evaluating a process of the educational planning.

North Carolina. Department of Public Instruction. The Division of School Planning. School Design. Raleigh, North Carolina: The Department.

Basic principles of school design is the thrust of this publication. It focuses on the interrelationship of patterns of school activities, organization of activities on the site, design potentials for various sites, and the building design data necessary for communicating the school's needs to the architect.

School Planning Laboratory. Spectrum of Electronic Teaching Aids in Education. Stanford, California: Stanford University, 1965.

This publication seeks to suggest which learning functions can be served electronically to symbolize the nature and progressive complexity of each electronic system, and finally to estimate budgets which will provide for adequate systems in relation to engineering and warranty costs.

Strevell, Wallace H. and Burke, Arvid J. Administration of the School Building Program. New York: McGraw-Hill Book Company, Inc., 1959.

A comprehensive textbook on the administration of the school plant program. The book is organized into three major parts: Part I - "Policy Decisions" deals with school building needs studies and long-range planning; Part 2 - "Program Recommendations" deals with local study of plant needs, evaluation of existing plant, determination of additional plant needs, site selection and development, and the preparation of educational specifications. Part 3 - "Project Administration" is concerned with the financial aspects of a building program and with public relations. There is a brief mention of the objectives of vocational education as contrasted with the objectives of general education on page 12.

The Cost of a Schoolhouse. New York: Educational Facilities Laboratories, 1960.

This book deals with the cost of a schoolhouse and the process of planning and financing it. It provides median costs for various building elements, designates individual responsibilities in process of building, and discusses arrangement of space and environmental factors.

VOCATIONAL-TECHNICAL FACILITY PLANNING

American Vocational Association. Developing Educational Specifications for Vocational and Practical Arts Facilities. Washington, D. C.: The Association.

The purpose of this publication is to reduce the broad principles and processes of school plant planning to those most applicable to vocational and practical arts education. Effective techniques for developing educational specifications are suggested. The committee provides a sequential treatment of program and administrative considerations, desired space and educational program, special site arrangement features, special physical aspects of building, and the financial requirements for the project.

Calder, Clarence R. Modern Media for Vocational-Technical Education. Connecticut: State Department of Education, 1967.

A study of related literature on programmed instruction, instructional films, instructional television, and learning from various instructional media. It analyzes new instructional media approaches used at North Carolina's Fundamental Learning Laboratories System, and the integrated experience approach at Oakland Community College.

Chase, William W.; Browne, Johnny W.; and Russo, Michael. Basic Planning Guide for Vocational and Technical Education Facilities. Washington, D. C.: Department of Health, Education, and Welfare, U. S. Government Printing Office, 1965.

A general guide that describes important steps to be followed in the planning for and construction of vocational and technical education facilities. Important topics covered are: the impact of the Vocational Education Act of 1963; surveys of area educational needs; use of consultant services; basic planning considerations; educational specifications; general planning; and school construction cost and outlay. Sample floor plans and picture illustrations of vocational schools are included.

McKee, Robert L. and Ripley, Katherine J. The Documentation of Steps to Establish a Technical College and the Evaluation of PERT as a Planning Tool for Educators. Bailey's Crossroads, Virginia: Unpublished report, 1966.

An account of the procedures followed in the establishment of a technical college within a period of less than 90 days. The entire planning process and implementation is described along with the PERT technique which was applied. The author concluded the PERT (Program Evaluation and Review Technique) was effective in assisting the planners in reaching their objectives within a short period of time.

Stanford University. Trends in Facility Design-Vocational-Technical Continuing Information Program. Stanford, California: School of Education, 1966.

The pamphlet emphasizes the need for a total flexibility concept in school building. Consideration is given to the use of building components to provide flexibility in space, lighting, air-conditioning, sewage system, and the like.

U. S. Department of Health, Education, and Welfare. New Ideas and Construction for Vocational Education. Washington, D. C.: Unpublished, 1967.

A report on new trends in the construction of vocational education facilities. Among topics covered are occupational clusters, teaching techniques such as micro-teaching and educational television, facilities for handicapped children, educational parks, and unique problems faced by large city school systems. Special consideration is given to maximum utilization of vocational education facilities on an around-the-clock basis.

Valentine, Ivan E. and Conrad, M. J. Progress Report: Vocational-Technical Facilities Project. Columbus, Ohio: The Center for Vocational and Technical Education, The Ohio State University, 1967.

A report which relates the thinking of six outstanding consultants on various topics relating current trends in vocational-technical education and facility planning. Reviews the work of a local consortium consisting of three Center vocational specialists, three school plant planners, three representatives from the State Department of Education, three local school officials, and three practicing architects in defining problems, clarifying issues, suggesting approaches to organizing planning guides, and establishing guidelines for a series of facility planning guides in selected vocational and technical subject areas.

Wohlers, A. E. A Manual for Planning a Secondary School Building (Vocational Education). Columbus, Ohio: The Administration and Facilities Unit, School of Education, The Ohio State University, Pamphlet C-14.

A general facility planning guide for programs of vocational education. Principal topics covered include: 1) number of teaching stations, 2) types of teaching stations, 3) equipment needs, and 4) floor areas required. The planning manual also deals with spatial relationships of teaching facilities and the utilization of auxiliary areas such as libraries,

cafeterias, and administrative suites. Planners using the guide are directed to complete checklists and fill-in blanks with the necessary information pertinent to vocational facility planning.

BUSINESS AND OFFICE EDUCATION FACILITY PLANNING

California. State Department of Education, Division of Instruction, Planning and Equipping Business Education Classrooms. Sacramento, California: The Department, 1961.

The guide in a realistic manner presents the relationship of the business education curriculum to planning and equipping business and office education classrooms. Although the publication has been designed primarily for high schools, it may be used as a source of reference in planning facilities for junior colleges and adult education programs. As in most vocational fields, the facilities for business and office education depend more upon the program than upon the age group. A bibliography of materials which may be useful to planners of business and office education facilities is found in this publication.

New Hampshire. State Department of Education, Division of Vocational-Technical Education. A Guide for Teaching Vocational Office Education in the Secondary Schools of New Hampshire. Concord, New Hampshire: The Department, 1966.

Several pages (57 to 63) in this guide contain check lists relative to business and office education facilities and equipment. Also, some significant general considerations are included.

New Jersey. Department of Education. Suggested List of Basic Equipment Requirements for Furniture, Machinery, Portable Equipment. Trenton, New Jersey: The Department, 1966.

An itemized list of equipment requirements for the vocational service areas of trade and industry, distributive education, business and office education, health occupations, home economics, and agriculture.

New York. State Education Department, Bureau of Business and Distributive Education. Business and Distributive Education Classrooms and Facilities. Albany, New York: The Department, 1965.

This guide, almost entirely pictorial, was developed as an aid to boards of education, advisory committees, school administrators, architects, and business department chairmen and teachers responsible for the planning of business and distributive education classrooms and facilities. Unlike other publications of this type, the information in this guide is arranged by school enrollments.

Pennsylvania. Department of Public Instruction. Bulletin 275, Typewriting for Business Education Departments in Pennsylvania's Public Schools. Harrisburg, Pennsylvania: The Department, 1962.

In this guide, chapter five deals with electric typewriters and chapter six deals with facilities, equipment, and supplies. Since all business and office education departments have at least one room used as a typewriting laboratory, the material this publication contains should be of interest to school administrators and business and office education teachers. The material in these two chapters is well illustrated with charts and pictures.

Pennsylvania. Department of Public Instruction. Bulletin 277, Shorthand for Business Education Departments in Pennsylvania's Public Schools. Harrisburg, Pennsylvania: The Department, 1968.

The seventh chapter of this course of study presents a comprehensive analysis of shorthand facilities. This guide points out that an expanded pupil enrollment justifies the planning of rooms for the special needs of a specific subject. Enrollment in shorthand may be the determining factor for having a specially designed shorthand classroom. When the shorthand classroom is equipped with typewriters for transcription purposes, it also could serve as a typewriting classroom. Specific topics discussed in this publication include the classroom, dictation laboratory, overhead projector, tape recorder, record player, instructional materials center, and supplies.

Selden, William. Planning the Facilities for Business Education. Monograph 112, Cincinnati: South-Western Publishing Company, December, 1964.

This guide provides a comprehensive analysis of facility planning for a business and office education program covering such topics as 1) general room requirements, 2) space requirements, 3) business education rooms, and 4) general equipment requirements. An appendix on suggested layouts and one on sample questionnaires are also included.

Selden, William and Meyer, Bernadine. Business Education Facilities, Supplies, and Aids. Eastern Business Teachers Association Yearbook, Vol. XXXVI. New York, New York University Campus Stores, 1963.

This is the most comprehensive business and office education publication available on this subject. It has been planned and organized to provide concrete and specific assistance to school administrators and business and office education teachers who are concerned with the facilities, supplies, and aids for this field. To the degree possible, the special needs of the business and office education department have been translated into details and specifications. This publication has been designed to assist in the development of a

functional business and office education department, and the suggested plans should be adapted to meet the needs of the school and the community.

Selden, William and LaSalle, James. "Facilities for Teaching Business Data Processing," American Vocational Journal. April 1966.

Data processing is a relatively new aspect of the business and office education program, and generally is one of the most expensive laboratories to equip. This article discusses basic considerations which include location of suite, floor level, number of rooms, electricity, air conditioning, acoustics, selection of equipment, arrangement of equipment, and carpeting of floor. Also, specific information on equipment and cost is presented.

Virginia. State Department of Education, Division of Vocational Education. Suggested New Curriculum Patterns for Office Occupations Education. Richmond, Virginia: The Department, February 1968.

This publication is primarily a curriculum guide for business and office education in the Commonwealth of Virginia. Appendix E of this booklet is entitled "Physical Facility Layouts" and includes equipment listings and layouts for various business and office education classrooms and laboratories.

PUBLICATIONS OF
THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION

RESEARCH SERIES

no.	name of publication	cost
1	A National Survey of Vocational Education Programs for Students with Special Needs. April 1967. 89+ 14 p. ED011041	$2.00
2	The Demand for and Selected Sources of Teachers in Vocational and Technical Education, State Directory. January 1967. 31+ 51 p. ED012331	o
3	Research and Development Priorities in Technical Education. May 1967. 34 p. ED013888	o
4	Review and Synthesis of Research in Agricultural Education. August 1966. 140 p. ED011562	1.50
5	Review and Synthesis of Research in Business and Office Occupations Education. August 1966. 128 p. ED011566	o
6	Review and Synthesis of Research in Distributive Education. August 1966. 212 p. ED011565	o
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